CONFERENCE SESSION TOPICS & DESCRIPTIONS

Session 1 Tuesday, 10:30 am – 12:00 pm

Kentucky's GIS Showcase

Yeoman's Hall

The Kentucky Geography Network: What Do You Have to Offer???

Kent Anness & Kim Anness
Ky. Division of Geographic Info.

The building and maintenance of the KYGEONET has been a collaborative effort of the Kentucky GIS community and successfully showcases the geospatial resources available for the Commonwealth. An overview of the KYGEONET Website and its Geographic Explorer will be presented. The Kentucky Basemap Viewer and integration with the KYGEONET, USGS National Map, and Geospatial One-Stop will be demonstrated. Tips will show how to utilize the internet mapping services with ArcExplorer, ArcMap, and ArcExplorer Web. Many GIS users in the Commonwealth are "creating" resources that others would find interesting and useful. A discussion of what and who should publish will close the session. This session will provide an overview of what "feeds" these resources, how agencies ensure its currency, and plans for the future.

KyRaster & KyVector: The Commonwealth's Geospatial Data Backbone

Kent Anness & Kim Anness
Ky. Division of Geographic Info.

KyRaster is one of the most valuable GIS components in Kentucky and was built collectively by GIS Staff from several state government agencies. This 1TB+ database contains the aerial images, 2004 NAIP/FSA imagery, topographic maps, digital elevation models, hillshade, SPOT satellite imagery, TruColor imagery, land cover imagery, slope, and other critical raster GIS base layers. Nearly every state agency involved with GIS leverages this resource in one way or another. It drives the internet mapping applications served by state government and is leveraged on the GIS Desktop by nearly 100 users in state agencies. Like KyRaster, KyVector is the master repository of vector-based (lines, polygons, and points) GIS data in the Commonwealth. This SDE instance is leveraged by ArcGIS users within the Commonwealth's WAN and by many internet mapping applications. Full metadata records are included for each vector dataset. This session will provide an overview of what "feeds" these resources, how agencies ensure its currency, and plans for the future.

Kentucky's GIS Showcase

Merchant's/Friar's Hall

GIS Today - The NRCS Perspective

Steve Crabtree,
National Resources Conservation Service

The Natural Resources Conservation Service (NRCS) is the U.S. Department of Agriculture's lead conservation agency. The NRCS mission is "To provide leadership in a partnership effort to help people conserve, improve, and sustain our natural resources and environment". This presentation will provide an overview of the agency's use of GIS technology and information with new methods to utilize SSURGO datasets (county-level digital soils data). Example applications and topics will include: Web Soil Survey, Soil Data Viewer, USDA Geospatial Data Gateway (public data access), NAIP program status, and field office level GIS tools and tasks, such as Customer Service Toolkit, creating soils-based thematic maps and reports, editing soils lines in conjunction with DEM data, etc.

Lexington-Fayette Urban County Government Presentation

David Lucas
Lexington-Fayette Urban Co. Gov't

Title and Description TBA

GIS Tools & Techniques

House of York

Custom Building & Codes Application Using VBA and ArcGIS

Phil Blondin
Geo-Jobe GIS Consulting

ArcGIS ships with a built-in *Visual Basic for Applications* editor that can be used for custom scripting in the ArcGIS environment. These applications can reduce work time and increase productivity by automating time-consuming, repetitive processes. The Regional Planning Commission used the ArcGIS VBA editor to build a custom application, completely automate the permit process, and create a way to track records through the GeoDatabase visble in the Arcmap environment.

Using ArcIMS as a Data Entry & Editing Tool

Jerry Weisenfluh and Doug Curl
Kentucky Geological Survey

KGS has developed several data entry applications which use ArcIMS technology to allow users to upload, enter, and edit GIS related data. This talk will give an overview of 4 data entry ArcIMS-related applications developed by KGS staff: 1) Map extents creation tool: creates custom coordinate extents to reference geographic areas; 2) Oil and gas permitting tool: automates the KGS business process for verifying new well permit locations, requesting sample data, and initiating final permit processes; 3) Lithologic data entry tool: reviews well databases to extract subsurface lithologic information from oil, water, and coal borehole wells; 4) Coordinate upload and plot tool: uploads a text file of coordinate locations to the web server, views data points, and appends to a database.

Navigating through ESRI: Overview of Online Self-Help Resources

Leslie Meriwether, *ESRI*

This presentation will introduce online customer resources implemented by ESRI in the last year and will include a review of existing online services. The focus will be on the new ESRI Customer Care Portal, and ESRI Customer Service and Technical Support sites. Users will learn how to obtain secure access to these resources and the breadth of information available about their company accounts and personal subscriptions via a live demonstration. Ultimately, this presentation seeks to enable customers to more efficiently manage their ESRI accounts and software independently, on demand, and when needed, outside of the constraints of ESRI business hours.

Surveying 101

Ploughman's/Monk's Hall

Surveying 101: Session I

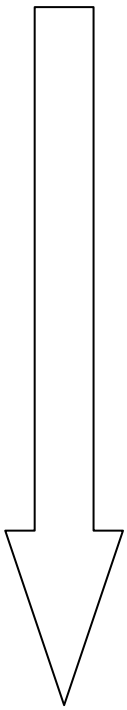
Chris Gephart, PLS
Bayer Becker Engineers

Robert Westermeyer, PLS
Erpenbeck Consulting Engineers

Brian R. Cox, PLS
Cox Land Surveying

Greg Larison, PLS
Viox & Viox

Surveying 101 is an introduction to the basic concepts and elements of Land Surveying. The course will cover the various processes of land surveying from initial client contact to project deliverables. Session I will be performed outdoors gathering data for a boundary and location survey.



90-minute session with fieldwork activity

CONFERENCE SESSION TOPICS & DESCRIPTIONS

Session 2 Tuesday, 2:00 pm – 3:30 pm

Kentucky's GIS Showcase

Yeoman's Hall

Boone County GIS: Past, Present & Future

Steven Gay & John Harney
Boone Co. Planning Commission

The Boone County Geographic Information System has grown into an enterprise GIS that supports thirty agencies in and around Boone County. This presentation will begin with a look back at the 1990s – a period when many challenges were overcome and the system got off of the ground. The organizational makeup of the consortium will be outlined, and milestones that led to the maturation of the system will be highlighted. The present state of Boone County GIS will then be spotlighted, including implementation of methodologies for maintaining data and focus toward getting data into the hands of consortium agencies and staff. Customized GIS applications deployed to consortium agencies enable employees to utilize GIS for everyday work activities. The presentation will end with a look at the future direction of Boone County GIS and will involve a discussion of system architecture and design strategies, advanced geospatial analysis, improved data management and GIS administration.

Kentucky Emergency Management

Charlie Winter
Ky. Division of Emergency Mgmt.

The mission of the Kentucky Emergency Management is to provide a comprehensive Emergency Management System to protect life and property, public peace, health, safety, and the environment of the Commonwealth of Kentucky through an ALL HAZARDS approach to mitigation, preparedness, RESPONSE, and RECOVERY from disasters and emergencies which a local emergency response agency determines is beyond its capabilities.

Kentucky's GIS Showcase

Merchant's/Friar's Hall

Mission Accomplished: Regulating Mining in the Ky. Dept. of Natural Resources

Daryl Hines
Ky. Dept. of Natural Resources

Victory has been achieved in the major battle to deploy a GIS with the Divisions of Mine Permits, Mine Reclamation and Enforcement, and Abandoned Mine Lands. To defend the victory cry, a retrospective examination was performed to understand the history of GIS within these state divisions. Results indicate that, with proper funding and staff, GIS empowers employees to review permits, inspect mines and oversee environmental engineering projects. It also gives management a tool to address larger mining issues using geospatial data that did not previously exist. GIS has become a tool of choice for sharing mining information with the public, utilizing the web with interactive maps, and downloading spatial data.

Delivering the Perfect Pizza

Patty Farris
Papa John's International

If you thought Papa John's Pizza was just a pizza company, you are in for a surprise. GIS technology helped Papa John's Pizza to become the third largest pizza company in the nation. This presentation will show the various GIS applications Papa John's Pizza uses in delivering the perfect pizza. Applications used in site selection, store mapping, and online services will be highlighted. This presentation will also include a demonstration of Papa John's online services and a discussion of how customer and street data, along with GIS applications, help deliver the perfect pizza.

GIS Tools & Techniques

House of York

The Doctor is In: ArcGIS Tips & Tricks

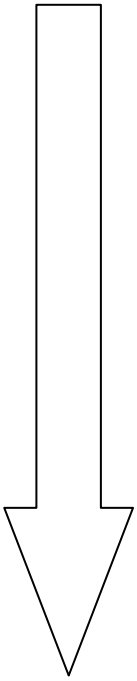
Kim Anness
Ky. Division of Geographic Info.

Rusty Anderson
Ky. Infrastructure Authority

Ken Bates
Kentucky State University

Laura Jefferson
Buffalo Trace Area Dev. Dist.

This session will highlight several useful tips and tricks to perform tasks in ArcGIS software. Toward the end of the session, presenters will take questions from the floor. Some topics included in the presentation include adding an ArcIMS service into ArcMap and "steal" the data, customization of the ArcMap interface, and connecting to an Excel spreadsheet. This session will be useful for all levels of GIS users.



90-minute
presentation/demonstration

Surveying 101

Ploughman's/Monk's Hall

Surveying 101 Session II

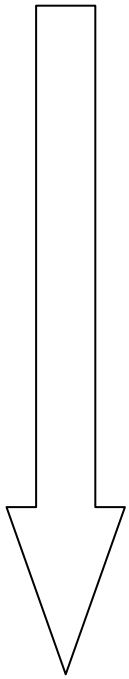
Chris Gephart, PLS
Bayer Becker Engineers

Robert Westermeyer, PLS
Erpenbeck Consulting Engineers

Brian R. Cox, PLS
Cox Land Surveying

Greg Larison, PLS
Viox & Viox

Surveying 101 concepts from Session I will be put into practice during Session II. Data will be imported into a CAD drawing and then used to prepare a survey plat. Learning these basic surveying processes will help the Commonwealth's geospatial/mapping communities seize the opportunity to better understand the surveying profession.



90-minute lecture
and hands-on learning

PANEL SESSIONS & ROUNDTABLES

Session 3 Tuesday, 4:00 pm – 5:30 pm

Kentucky's Area Development Districts (ADDs)

Yeoman's Hall

Moderator

Rusty Anderson
Ky. Infrastructure Authority

Panelists

Laura Jefferson
Buffalo Trace ADD

Shane New
Bluegrass ADD

Bill Smith
Green River ADD

Tracy Wireman
Big Sandy ADD

Adam Forseth (invited)
Ky. Regional Planning & Develop. Agency (KIPDA)

Property Valuation Administrators (PVAs)

Merchant's/Friar's Hall

Moderator

Ron Johnson
Ky. Department of Revenue

Panelists

Chuck Adkins
Boyd Co. PVA

Connie Crain
Fleming Co. PVA

Brad Bailey
Barren Co. PVA

Ervine Allen
Breathitt Co. PVA

Jason Scriber
Henry Co. PVA

Merrick Krey
Kenton Co. PVA

Jason Steele
Pendleton Co. PVA

Karen Curtis
Robertson Co. PVA

Education (K-12 and Post-Secondary)

House of York

Moderator

Demetrio Zourarakis
Ky. Division of Geographic Info.

Panelists

Dr. Steve Parkansky
Morehead State University

Dr. Mark Wiljanen
Ky. Council of Post-Secondary Education

Fred Lassiter
Bellarmine University

Matt Varney
Ky. Community & Technical College System

Ken Bates
Kentucky State University

Linda Pettinger
Ky. Dept. of Education, Virtual Learning

Dr. Michael Kennedy
University of Kentucky

Michael Busby
Murray State University

Kevin Cary
Western Kentucky University

Robert Forbes
University of Louisville

Jeannie Biddle
Scott County Schools

DeWayne Sims
Eastern Kentucky University

Kentucky View
The Commonwealth's Remote Sensing Consortium

Ploughman's/Monk's Hall

Dr. Zachary Bortolot
Dr. Christine McMichael
Institute for Regional Analysis & Public Policy, Morehead St. Univ.

Demetrio Zourarakis, PhD.
Ky. Division of Geographic Info.

KentuckyView is one of 25 'StateView' members of *AmericaView, Inc.*, a nationwide program focusing on satellite and aircraft remote sensing data and geospatial technologies in support of K-16 education, workforce development, applied research, and technology transfer. As such, *KentuckyView* seeks to improve life for Commonwealth citizens by supporting the open exchange of remote sensing data, information and knowledge among its members and the public, developing remote sensing and related geospatial materials for K-16 educational curricula, discovering and applying new and better remote sensing technologies, and providing outreach activities and workforce development training throughout the state. The purpose of this panel session is to provide an overview of the goals of *AmericaView, Inc.* and *KentuckyView*, to highlight activities of current *KentuckyView* members, and to answer questions from both current and potential members.

Evening Reception in House of Stuart/House of Tudor
5:30 – 7:30 pm

CONFERENCE SESSION TOPICS & DESCRIPTIONS

Session 4 Wednesday, 8:00 am – 9:30 am

Kentucky's GIS Showcase

Yeoman's Hall

GIS Applications at UK's Department of Biosystems and Agricultural Engineering
Ben Koostra
Biosystems & Agricultural Engineering, University of Ky.

The Biosystems and Agricultural Engineering Department at the University of Kentucky is engaged in a variety of multi-disciplinary research, education, and outreach efforts utilizing GIS as a tool to link biology and engineering to develop sustainable uses of our natural resources and to efficiently produce food for an increasing world population. GIS is a key component for producers, agribusinesses, and regulators to increase profitability while ensuring the safety of our food supply and engaging in environmentally-responsible practices. This presentation will highlight the use of GIS through innovative research and development projects, applications for classroom learning, and opportunities for public outreach.

LOJIC: 20/20 Hindsights
Curt Bynum
Louisville-Jefferson Co. Information Consortium (LOJIC)

The Louisville/Jefferson County Information Consortium (LOJIC), consisting of Louisville Metro government, Metropolitan Sewer District, Jefferson County Property Valuation Administrator and the Louisville Water Company, was formed in 1986 to serve the geospatial technology needs of the local community. LOJIC has grown to become a nationally recognized GIS enterprise with over 400 users across three dozen local agencies and utilities. Used for managing local land records, utility assets, addresses, transportation infrastructure, E911 response, disaster planning, 24-7 call centers, and many other activities, LOJIC is a workhorse and a vital component of Louisville Metro's mission-critical workflows and decision making processes. This presentation highlights some of the history, experiences, hindsight observations and future directions of the LOJIC GIS.

Kentucky's GIS Showcase

Merchant's/Friar's Hall

Transportation GIS: On the Road to a New Paradigm
Will Holmes
Ky. Transportation Cabinet

The Kentucky Transportation Cabinet has over fifteen years invested in a transportation-focused GIS. This substantial commitment is paying dividends in changing how the Cabinet does business, serves its internal and external customers, and understands its assets. This presentation examines how the Cabinet has evolved its "confederated" GIS and grown to 240+ GIS users. It will show examples of current GIS projects and explore where GIS in transportation is headed in the near future.

Extreme GIS: The Evolution of GIS Applications & Data
Ron Householder
MapSync

Over the last ten years, much has changed in terms of both GIS data sets and application software. In this seminar we examine fundamental changes that have occurred within our industry, look to identify trends affecting the manner in which data and software interrelate, and take a look forward to how these changes will impact GIS in the future. This session will be relevant to the GIS novice and the GIS professional.

GIS Strategies & Evaluation

House of York

Demonstration of a Space-Time Information System: Kentucky's County-Level Mortality Rates
Timothy S. Hare
Institute for Regional Analysis & Public Policy, Morehead St. Univ.

New GIS technologies are making combined space-time research possible. This session will demonstrate the use of a space-time information system (STIS) through the exploration of the spatiotemporal transformations of Kentucky's county-level mortality rates between 1968 and 2002. The STIS assists in the assessment of changing patterns of mortality in Kentucky and the testing of relationships with poverty, educational attainment, urbanization, and Appalachian residence. The results of the space-time analysis reveal a highly variable spatial pattern, inconsistently decreasing mortality rates, and increasing clustering of relatively high rates in the central area of Appalachian Kentucky.

Dental Health: Fluoridation Effort of the Commonwealth
Michael Soto
Ky. Division of Geographic Info.

A geographic model is beneficial in assessing the Kentucky Oral Health Program's (KOHP) fluoridation efforts. This presentation will demonstrate the coverage of KOHP current fluoridation efforts and determine where the gaps in treatment or prescription methods exist.

Kentucky Public Health & GIS: Hurricane Katrina Response
Kenny Ratliff
Ky. Department for Public Health

More than 1200 persons representing environmental, medical, nursing, pharmaceutical, and epidemiology components of public health, responded to a call for volunteers following Hurricane Katrina's disaster. When the first Public Health Strike Team hit the ground in Gulfport, Mississippi, the need for maps was readily apparent. This presentation will present the global positioning and geographical information systems that were adapted to allow for a useful deployment. The real-world application of previous planning and the lessons learned from the experience are also presented. While GPS and GIS were not the end-all answer to this response, productivity was dramatically enhanced. Thus proving that both must be a part of event (both natural and man-made) planning.

GIS Tools & Techniques

Ploughman's/Monk's Hall

ArcWeb Explorer: An Overview
Angie Jennings & Emily Nordlah
Swova, LLC

ArcWeb Explorer is a new web-based map viewing application from ESRI. This presentation will give an overview of this new interface, its capabilities, and applicability to users. Usability information presented will be pertinent to those who have not yet made a heavy investment in GIS software and data acquisition but would like GIS capabilities without intensive software and data acquisition startup costs. This presentation will also show how ArcWeb Explorer and ArcWeb Services can supplement existing GIS systems with additional data and functionality.

Reverse GeoCoding: How to Assign Over 10,000 Addresses and Live to Tell About It
Thomas C. East
Northern Ky. Area Planning Commission

In 2003, thousands of Campbell County, Kentucky residents in seven different zip code areas had new addresses assigned to correct problems with the existing addressing system of rural routes and box numbers. This presentation covers the basics of the project and describes the data collection, data sources used, project implementation, and the use of reverse geo-coding to automate the assignment of addresses for this project and for on-going address management. Special situations, tips, tricks and other techniques will also be discussed.

Data Manipulation with Data Interoperability Extension
James Horton & Steven Gay
Boone Co. Planning Commission

Boone County GIS has spent the past year re-designing SDE production and publishing data models. Widely accepted best practices were adopted, including a rigid set of naming conventions, database normalization principles and geodatabase data management strategies. To continue support for Boone County GIS' legacy applications, ESRI's Data Interoperability extension was employed to manipulate re-designed production data into the schema required by the legacy applications. In addition, many external organizations prefer to receive GIS data that is formatted according to standard schemas. The Data Interoperability extension has enabled Boone County GIS to create and save standard data transformations that manipulate the production data on demand into preferred schemas. This presentation will focus on how to build data transformation models and highlights some of the more commonly used data manipulation functions employed by the Data Interoperability extension

CONFERENCE SESSION TOPICS & DESCRIPTIONS

Session 5 Wednesday, 10:00 am –11:30 am

Kentucky's GIS Showcase

Yeoman's Hall

Great Scott! Past, Present & Future of GIS in Scott County
Earl Smith
Georgetown-Scott Co. Planning Commission

This presentation is the story of the City of Georgetown and Scott County GIS program – past, present, and future. Implemented in the early 1990's, the program has faced office changes, administrative turnovers, substantial community growth, growing responsibilities outside of planning & zoning, and the usual obstacles a working GIS encounters while using public tax base to do more with less. Since its beginning stages, the GIS has collected or created hundreds of layers of data and has just received an update from 2005, including color imagery (DMC), color infrared, and additional planimetrics using LiDAR. Georgetown-Scott County has been producing hardcopy maps to utilize GIS data for years, and is now at the crucial point to finally distribute all of this data digitally to GIS constituents who have analyzed paper maps in the past. Part of this presentation will discuss the future of the County GIS and the obstacles it faces in reaching the end user. Migrating from the limited paper map, albeit very useful to city/county workers, to a digital framework and workflow, is the next step in Scott County.

Elevations and GPS: Kentucky Height Modernization
J. Ross Mackay
NOAA, National Geodetic Survey

What does a geodesist mean by elevation? The vertical datum of the National Spatial Reference System (NSRS) has seen two major revisions in the last century. Height above sea level is primarily defined by gravity. Beginning with reference tide gages, tedious measurements were used to create the national network of benchmarks. This declining infrastructure for mapping can only be affordably replaced by GPS. Accurate, reliable elevations determined by GPS require a framework of high accuracy reference monuments. The Kentucky Height Modernization Program (KY-HMP) is designed to bring this capability to the Commonwealth. Funded by a federal grant, the first goal is to build a network of GPS Reference Stations (KY-CORS). An immediate benefit of this network will be an ability to tie horizontal control to the Kentucky Geodetic Reference Network (KGRN) with great precision. The next stage of KY-HMP will transfer elevations from existing benchmarks to every KGRN mark and KY-CORS, allowing GPS to establish elevations for mapping and GIS.

Kentucky's GIS Showcase

Merchant's/Friar's Hall

A Sense of Place
Daniel I. Carey
Kentucky Geological Survey

Open a map and you will soon draw a crowd. Maps attract us because they give us a sense of where we are in the world: a sense of place. We in the 21st century GIS community inherit the work of thousands: those who mapped the roads, rivers, and hills; who created and maintain digital data; and who developed software and hardware for GIS. This rich legacy lets us produce maps quickly and cost effectively. KGS is preparing a series of maps—Generalized Geologic Maps for Land-Use Planning—that will provide residents of each Kentucky county with a greater sense of place and understanding of how the rocks beneath their feet shape the land and its use. Kentucky's GIS resources allow anyone to create maps giving Kentuckians a greater sense of place from a variety of perspectives: environmental protection, water resources, transportation and urban planning, wildlife management, economic development, and recreational resources.

GIS on a Shoestring: Evolution of GIS in Marshall County
Dave Estes
Marshall Co. Geographic Information Consortium (MaGIC)

This presentation documents the evolution of GIS efforts in Marshall County, Kentucky. A rural county in Western Kentucky, Marshall County contains small towns and small GIS budgets. The presentation will describe GIS efforts from its inception to the present, what was done, who did it, what tools were involved, how it was paid for, work involved in data creation, the formation of a consortium, where it is at today, and its future direction. Discussion will focus on the trade-offs an organization with small budgets must accept and how to maximize resources to create a GIS environment that serves the community.

GIS Strategies & Evaluation

House of York

Horticulture & Park Management through GIS: The Boone County Arboretum
Louis R. Hill, Jr.
Boone Co. Planning Commission

The Boone County Arboretum is a 120-acre facility located in rural Boone County and is unique in that it integrates active recreation facilities (baseball diamonds, soccer fields), passive recreation facilities (walking/jogging trail, wildlife observation areas) and an arboretum, all on the same site. To better manage the constantly changing facility, the Arboretum has implemented a combination of GIS/GPS technologies which allow the Arboretum to continuously update its inventory of trees, shrubs, plantbeds, trails, woods, and wetlands. To complement the use of these technologies, the information has been presented online as an IMS website. Finally, much of this work has contributed toward the publication of the 2006 edition of the Boone County Arboretum map distributed to visitors for general tourism purposes.

Assessing Risks at Kentucky's Orphaned Landfills
Paul Vidal, *FMSM Engineers*
Tony Cooley
Ky. Division of Waste Mgmt.

To better understand the hazards posed by abandoned landfills, the Division of Waste Management (DWM) funded a program to individually characterize each of Kentucky's orphaned landfills. To accomplish this task, site data was collected from field surveys, PVA research, and historic DWM archives. This data is used as a basis for characterizing the hazards and establishing a standard risk ranking associated with each site. Corresponding characterizations and analyzed data are stored within a database management system and will directly support prioritizing future mitigation efforts. The focus of this presentation will highlight the datasets collected, analyzed, and created to assist DWM's efforts to keep Kentucky safe.

Louisville Metro Hazard Information Portal: GIS is the Backbone
Ray Rush & Mike Anderson
FMSM Engineers

Flooding is the number one natural hazard present in the Louisville metro. In partnership with FEMA, Louisville Metropolitan Sewer District (MSD) contracted Fuller, Mossbarger, Scott and May Engineers to develop a portal designed to manage flood hazard information and mitigation activities. Tailored ArcIMS applications serve as the backbone for much of the site's functionality, and this presentation will provide various scenarios highlighting the benefits to its user community.
Contributing author: Julie Buckler, Louisville Metropolitan Sewer District

Applications of Spatial Imagery

Ploughman's/Monk's Hall

Aerial Mapping 101
Darrell Hamrick
James W. Sewall, Co.

A successful project starts from the ground up. Having an accurate basemap and/or imagery for planning and design purposes is a necessary first step for most projects and sets the tone and accuracy for the GIS system.
This presentation will focus on aerial photography and photogrammetry as a method in creating an accurate base map for GIS.

2006 Kentucky NAIP Program
Mike Ritchie, *Photo Science*

The United States Department of Agriculture (USDA) conducts the largest aerial photography program of our nation each year. Most of the lower 48 states are flown in natural color or color-infrared imagery for 1-meter or 2-meter resolution for digital orthophotos. Recent advances in digital imagery technology have accelerated this program toward the digital format, with approximately 49 percent of this year's program accomplished digitally. Photo Science will explain the program deliverables and announce the current progress in developing a leaf-on color infrared imagery for the entire state at 2-foot pixel. A combination of PowerPoint, text, and sample imagery, including graphics, will be utilized in this presentation.

New Approach for Rapid-Delivery Transportation Mapping
Mike Ritchie, *Photo Science*

The recent mapping of the Veteran's Parkway in Bowling Green is one example of the Transportation Cabinet's fast-track mapping projects that require quick turnaround to preserve overall project schedules. A project approach using first-generation digital imagery for the planimetric mapping, breakline collection, and digital orthophotography generation, coupled with airborne LiDAR to provide required mass points for the digital elevation model was used to ensure that demanding project schedules were met. This type of project approach is ideal for design-build projects, as it reduces both time and cost requirements for bid preparation. Project results included completion within the required timeframe, accuracies which exceeded requirements, and stunning digital imagery…providing a winning combination for this fast-track project.

CONFERENCE SESSION TOPICS & DESCRIPTIONS

Session 6 Wednesday, 1:30 pm – 3:00 pm

Kentucky's GIS Showcase

Yeoman's Hall

Flood Map Modernization in Kentucky: A Pathway to Success

Carey Johnson, *Ky. Div. of Water*
Mike Anderson, *FMSM Engineers*
Stephen Noe, *AMEC*

The Commonwealth of Kentucky is working with the Federal Emergency Management Agency (FEMA) and numerous other federal, state, and local agencies to update and upgrade flood maps statewide. The paper maps of old will be replaced with digital maps using the latest engineering and GIS technologies. In fact, GIS is playing a significant role in every stage of development of the new Digital Flood Insurance Rate Maps (DFIRMs). Spatial datasets available from the Division of Geographic Information and local entities provides a sound basis for producing new flood maps. The goal of this initiative is to transcend federal, state, and local levels to bring the user community (public officials, developers, homeowners, insurance agents, engineers, surveyors, etc.) a statewide, seamless flood hazard dataset in the GIS realm that will aid in assessing flooding vulnerability. These data may also be used for planning, emergency management, and economic development purposes. In addition, a flood hazard GIS-based website is being developed to bring in users that do not have GIS tools readily available. The overarching goal of this initiative is to utilize GIS capabilities and tools that are available statewide to allow citizens of Kentucky to make sound decisions when investing in the future.

From Paper Maps to ArcMAP: GIS as a Decision-Making Tool for KY Fish & Wildlife

Keith Wethington
Ky. Dept. of Fish & Wildlife

The KY Fish & Wildlife Information Section (KFWIS) is responsible for managing and deploying spatial technologies for the Dept. of Fish & Wildlife Resources (KDFWR). The KDFWR mission is "…to assist the Department in sustaining Kentucky's biodiversity by providing decision-makers with reliable, up-to-date geo-spatial data and technologies to support science-based management of the state's biological resources." Use of spatial technologies within KDFWR has evolved slowly. Mapping species occurrences started with paper maps and hand drawn dots. Much of this information was eventually transferred to ArcInfo. Shortly after its creation in the mid-1990s, KFWIS began working with Murray State University on *A GAP Analysis of KY*, which was published in 2003. KFWIS was the primary data manager for *Kentucky's Comprehensive Wildlife Conservation Strategy,* published in 2005. Current activities include migrating data and projects to SDE and ArcGIS, creating metadata, and expanding GIS availability to field staff.

Kentucky's GIS Showcase

Merchant's/Friar's Hall

GIS in Smallville: We Did it OUR Way (and You Can Too!)

Brad Bruton
Barrens Information Technology Systems, Inc.

This presentation will demonstrate how small town leaders had big time ideas and how their joined efforts became instrumental in achieving a common goal for multiple agencies. For14years, Barrens Information Technology Systems, Inc. (B.I.T.S.) has provided an invaluable service to it's seven GIS consortium members and the small rural community they serve by maintaining accurate and current base mapping, as well as an avenue for data sharing. This has been accomplished at a low cost with only a two-person staff. GIS data is now an essential part of everyday work for the involved parties. This data has been used for Enhanced 911 Services, countless water and sewer line projects, electric and cable television line design and construction projects, sidewalk and drainage projects, grant applications, traffic studies, etc since it's beginning in 1992. This presentation will also explain how any small rural county can begin their journey to a successful GIS at a relatively low cost.

Using GIS to Develop Hydrologic Tools for Kentucky

Mark A. Ayers
U.S. Geological Survey

By providing relevant data and interpretation when and where it is needed, the USGS is helping the Commonwealth address its water issues. To enhance these analyses and interpretations of hydrologic data, we are capitalizing on the availability of statewide GIS data and technologies to build more useful products and tools. GIS-based hydrologic data layers and analysis tools that are linked to stream sites, reaches, and basin areas aid in water supply planning and allocation, watershed and water quality tools, various permitting and design needs, or flood-plain delineation analyses. The goal is to make these available online.

GIS Strategies & Evaluation

House of York

Census 2010 Geography Programs for Local Governments

David Wiggins
U.S. Census Bureau

The 2010 Census will offer a number of opportunities for GIS professionals to have a positive impact on the completeness, accuracy, and usefulness of census data products for their local areas. Enhancements to TIGER, the Census Bureau's digital mapping database, utilize accurate centerline files obtained from state and local agencies. The Census Bureau works with local governments to obtain legal boundary updates through the Boundary and Annexation Survey. Local and regional agencies will have an opportunity to review and update statistical areas for 2010. Cities, counties, and towns will have an opportunity to impact the Census Bureau's address list through the Local Update of Census Addresses, or LUCA, Program.

Arc Pipeline Data Model

Fred Spickler, *Photo Science*

In recent years, many transmission facilities with large geographic assets have begun the adaptation of their hardcopy, digital, database, and GIS data into geo-relational databases to best leverage the use of this technology to achieve a broadly accessible enterprise-based data warehouse. To facilitate this migration within an ESRI framework, the APDM is rapidly being adopted by natural gas and liquid petroleum transmission companies. When it was determined that the APDM couldn't effectively and comprehensively provide a content standard for all of the individualized methods within the industry, the concept of a behavior standard and a content template was developed. This concept is fully functional and now in place at over 20 transmissions companies worldwide.

GIS Religion ?

John R. Schmidt, *NCAD Corp.*

Within our homes, churches, denominations, political parties, and throughout the world, the central "discussion," often conflict, concerns religion. Religion is personal and social, political…perhaps, like science, infinitely multi-disciplinary. It refers to the more or less privately-held world view guiding and judging our behavior, private and public. The relationship between religion and science is even more complex, as we listen to raging debates on evolution, etc. Both religion and science are pursuits in knowing. This session offers a clarification of God, based on science, consistent with common religions, including reference to fundamental Laws of Thermodynamics. This discussion leads us to consideration of the context in which GIS serves both religion and science.

Applications of Spatial Imagery

Ploughman's/Monk's Hall

Kentucky Landscape Census: Toward a Land Cover Change Detection Web Portal

Andrew Brenner, *Sanborn*

Demetrio P. Zourarakis
Ky. Division of Geographic Info.

The National Aeronautics and Space Administration (NASA) has funded the three-year Kentucky Landscape Census (KLC) project to develop a web portal providing access to GIS data and remote sensing-derived change detection functionality for user groups in selected counties. This project is designed to improve access to data and GIS functionality in a web-based or web-enabled environment according to agreed upon, open standards for data exchange and integration. The user interface allows viewing of imagery and image products, querying and reporting change statistics. Potential users, include Kentucky citizens, private sector planners, modelers, and local/state government decision makers.

Contributing Author: Brian Noyle, Sanborn

Kentucky Land Cover Datasets: Past, Present & Future

Andrew Brenner, *Sanborn*

Demetrio P. Zourarakis
Ky. Division of Geographic Info.

Kentucky is the beneficiary of two NASA grants that funded the creation of land cover maps for Kentucky. This talk will discuss the statewide land cover maps that have been produced. It will discuss the KLCD 2001, which provides more detail in the natural land classes, and will describe the update to the land cover using 2005 imagery. The presentation will also show the high resolution alternative land cover datasets produced and expected as part of these projects, including land cover based on 1 m IKONOS satellite imagery and using the new 2006 NAIP imagery.

Contributing Author: Mike Palmer, Sanborn

Spatial Scrutiny of New, Statewide, Temporal Land Cover Change Map of KY

Demetrio P. Zourarakis
Ky. Division of Geographic Info.

By virtue of the NASA-funded Kentucky Landscape Snapshot Project (KLS), Kentucky was one of the first states in 2001 to update its 1992 National Land Cover Dataset (NLCD). This created the opportunity to provide an improved baseline land cover dataset and imagery against which to perform land cover change detection. Use of an image-to-image change mask in the Kentucky Landscape Census project (KLC) required an analysis of the accuracy and spatial frequency distribution of this product.

CONFERENCE SESSION TOPICS & DESCRIPTIONS

Session 7 Wednesday, 3:30 pm – 5:00 pm

Kentucky's GIS Showcase

Yeoman's Hall

Spatial Engineering
Louie Greenwell, *FMSM Engineers*

What started out as a single project and a department of one ten years ago has grown into a collection of over 35 GIS professionals in six locations across the Midwest and Southeast. During that same time, GIS technology has moved from the back room to the front door, to the Internet. As the technology migrated to more affordable platforms, public and private sector entities of all sizes began to see the value of GIS. FMSM has been an active provider of "Spatial Engineering" services to federal, state and local government agencies and utility companies. Any success in this area can only be attributed to the integration of GIS and engineering to solve clients' problems. This presentation will highlight some of the ways that FMSM has integrated GIS into the engineering business to make it just another tool in the toolbox and the benefits of this approach for FMSM clients and staff.

LIDAR & Digital Elevation Model Generation
Mark Meade, *Photo Science*

Accurate elevation models serve as important information in many GIS platforms today. They are critical in planning for new infrastructure like storm or sanitary sewers, grading for new commercial or residential developments, required for any hydraulic and flood studies of stream, and critically important for preparing for natural and other disasters. The way elevation models are derived has changed considerably over the last few years. At one time elevation models were almost solely derived from photography, which can be a labor intensive, and therefore costly, process. Today, elevation mass points are often collected with airborne LiDAR sensors that can collect up to 150,000 points on the ground per second of flight. For large projects, like city or county-wide mapping, the cost benefits to a LiDAR approach are significant. And the accuracies available in the LiDAR approach are appropriate for most projects. Gains in hardware and software platforms over the last 5 years have been significant, but there are considerable improvements on the horizon that will further improve the accuracies gained from LiDAR, while reducing the unit costs for elevation models derived in this manner and resulting in the use of LiDAR in many more applications.

Kentucky's GIS Showcase

Merchant's/Friar's Hall

LINK-GIS: 20 Years and Growing
Trisha Brush & Tom East
Northern Ky. Area Planning Commission

LINK-GIS is a Northern Kentucky GIS serving Kenton, Campbell and Pendleton Counties. LINK-GIS is one of the Commonwealth's pioneering GIS dating back to 1985. What began as a tool for one governmental agency to use in an environmental clean-up has become a wide-ranging service for a variety of public and private uses. In this session, a flashback to the start-up days, growing pains along the way, successes and secret weapons, and the future of LINK-GIS will be shared.

GIS Strategies & Evaluation

House of York

All Features Great and Small: Phase II Compilation of Kentucky Place Names
Steven Parkansky
Institute for Regional Analysis & Public Policy, Morehead St. Univ.

The United States Geological Survey has established the Geographic Names Information System (GNIS) to provide for uniformity in geographic names and orthography throughout the Federal Government. Phase I, the compilation of geographic names from USGS 7 ½ minute quadrangles, has been completed for Kentucky. This presentation examines the first part of Phase II – the compilation of remaining geographic place names east of 84°W longitude. The use of GIS in compiling, geo-referencing, editing, storing and transmitting names data for Kentucky's Phase II GNIS will be demonstrated.

Evaluating Methods of Utilizing GIS in the Field
Karla Andrew
Center for Water Resource Studies, Western Ky. University

Real time data and mapping in the field is becoming more accessible with the availability of tools such as Palm devices and Tablet PCs. Using the J2ME platform, GIS capability and geodata will be available from virtually every location accessible to a wireless signal. Allowing environmental users and emergency personnel access to real time information when the data are most needed will increase response to crucial issues. Field uses of GIS, including an evaluation of data quality available through mobile devices, will be discussed.
Co-Author: Alanna Storey, Center for Water Resource Studies.

***Educate-the-Educator* Pilot Workshop for Online Remote Sensing Course & Program**
Vince DiNoto, Jr.
Ky. Community & Technical College System

Continuing growth in the use of remote sensed imagery and information requires a more fundamental and solid knowledge of remote sensing data models and techniques, which can be obtained through courses and curricula at post-secondary education institutions. Through support provided by the NASA-funded Kentucky Landscape Census project, state-of-the-art online courseware and curriculum were recently purchased from the Institute for Advanced Education in Geospatial Sciences (University of Miss.), and the Ky. Community and Technical College System implemented the first workshop in June designed to introduce this resource to faculty within the system. A total of 16 faculty representing 7 campuses Kentucky participated in the 2 day workshop.

Applications of Spatial Imagery

Ploughman's/Monk's Hall

Pipeline GIS
Deborah Rohrer
Columbia Gas Transmission
Mary Beth Naiser
Photo Science

Columbia's recent GIS conversion, which took them from an Intergraph to an ESRI-based solution for managing their pipeline assets, continues to benefit from added information and improved accuracy in their pipeline facilities. A system-wide project this year to use accurate GPS locations at all road crossings, coupled with new color digital imagery and existing system information, is allowing development of alignment information at an accuracy well beyond what historical information has provided. A new approach using a medium-format digital camera, coupled with airborne GPS and inertial navigation systems, provides an accurate and cost-effective solution for monitoring development around the pipeline as required by the DOT. Orthorectified imagery is used to locate and classify structures along the pipeline, which is subsequently used in internal processes to perform Class and High Consequence Area (HCA) analyses. This color, first generation, digital imagery is loaded into a raster catalog for ease of deployment to GIS users through ArcSDE.

Advancements of Large Format, Push-Broom Digital Cameras in OrthoPhotography
Kent L. Park
EarthData International, Inc.

This presentation illustrates the benefits of digital cameras in the acquisition of aerial imagery. Recent innovations in push-broom digital cameras have provided a stimulating advancement in the production of high-resolution, high-accuracy digital orthophotos, planimetric and topographic base maps. A comparison of the sensors format and processing techniques will be discussed to dispel some of the myths surrounding the use of digital cameras for imagery acquisition.